SOUTH AFRICAN IRIDACEAE. THE GENUS ANAPALINA.

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Anapalina is one of six genera described for the first time by N. E. Brown in 1932, when he restored to *Antholyza* the plant on which Linnaeus founded the genus, namely *A. ringens* L. The heterogeneous group of species, which had been placed in *Antholyza* by Baker and other authors prior to 1932, N. E. Brown divided among his six new genera and two others which had been proposed over a hundred years earlier (Trans. Roy. Soc. S. Afr., vol. 20, pp. 261–79). Since then there has been some difference of opinion about his conception of some of these genera, e.g. Hutchinson, in The Families of Flowering Plants (vol. 2, pp. 140–1 (1934)), combined one of them with one of the older ones, while Phillips further reduced the number by grouping three of Brown's new genera with one of the older ones under the earlier name (Bothalia, vol. 4, pp. 43–4 (1941)). However, there is no doubt about the status of *Anapalina*, which both Hutchinson and Phillips agree in upholding.

Several characters distinguish this genus from *Antholyza* and the other genera into which the various species removed from *Antholyza* have been placed, such as the more or less coriaceous leaves with a few prominent primary veins, and the very distinct bracts and bracteoles which are dry, brown or reddish and hard or moderately firm at the time of flowering, the latter completely united and slightly longer than the bracts. The capsules and seeds, also, are unlike those of the other genera but all these organs, as well as the deep-seated corms with tunics of matted reddish brown fibres extending up in a long neck, are like those of *Tritoniopsis*, to which *Anapalina* is closely allied. (An account of *Tritoniopsis* was published last year in the Journ. S. Afr. Bot., vol. 25, pp. 319–55.) It is separated from *Tritoniopsis* by the flowers, those of *Anapalina* having a curved perianth tube with a narrow cylindrical lower portion passing gradually into a broadly cylindrical upper part, the stamens arising at the base of the dilated part of the tube, whereas in *Tritoniopsis* the perianth tube is straight or sometimes very slightly curved near the throat, and narrowly cylindrical throughout or only slightly dilated towards the throat, with the stamens arising in the throat. The habitat of the two genera is more or less the same and the geographical distribution similar, though *Anapalina* covers a wider area, extending from the Calvinia and Vanrhynsdorp Divisions to the Cape and eastwards as far as East London.

N. E. Brown placed four species in *Anapalina* and a few months later Fourcade described a fifth. In the present revision these five species are upheld and two more added which are transferred from *Chasmanthe*. Although the flowers of these two species closely resemble those of *Chasmanthe*, all other parts of the plant are the same as those of *Anapalina* and not like those of *Chasmanthe* (for details see note under *A. caffra* in this paper). *Chasmanthe* was one of the genera described by N. E. Brown in 1932, which both Hutchinson and Phillips sank under *Petamenes*, but I cannot agree with them and consider that with the exclusion of the two species now removed, and possibly another, the genus is quite distinct from *Petamenes* and should be upheld. (See my notes in Ann. S. Afr. Mus., vol. 40, pp. 97–98 (1954).)

Species of *Chasmanthe* are easily cultivated and several illustrations of plants grown in England and Europe during the eighteenth and early nineteenth centuries appear in old botanical works, but there are none of *Anapalina* and only two or three figures of *Tritoniopsis*. *Anapalina nervosa* was illustrated in 1915 in Marloth's Flora of South Africa (vol. 4, t. 50 A), and another species, *A. triticea*, in 1929 in Flowering Plants of South Africa, vol. 9, t. 359, under the name *Antholyza lucidor*, when Pole Evans made the following comment: "*Antholyza lucidor* is quite a common plant on the slopes of Table Mountain above Camps Bay, and is also found in other districts of the south-western Cape Province. Though it was gathered by the old collectors, and must have been seen by men like Masson and Niven, who collected in the neighbourhood of Table Mountain, it appears strange that no figure of the species is illustrated in the old botanical publications, more especially as it is quite a striking plant." Undoubtedly the reason for this is that these plants, with their deep-seated corms, do not thrive in cultivation; two or three species have been grown and flowered in the National Botanic Gardens, Kirstenbosch, but they have not survived for more than a year or two.

ACKNOWLEDGMENTS.

Living plants of all except one species have been examined, and in addition material in collections in the following institutions:—

Bolus Herbarium, University of Cape Town	BOL
Botaniska Museet, Uppsala	UPS
British Museum, Natural History	BM
Compton Herbarium, National Botanic Gardens, Kirstenbosch	NBG
Conservatoire et Jardin Botanique, Geneva	G
Linnaean Society of London	LINN

Muséum National d'Histoire Naturelle, Laboratoire de Phanérogamie, Paris	P
National Herbarium, Pretoria	PRE
Royal Botanic Gardens, Kew	K
South African Museum Herbarium, National Botanic Gardens, Kirstenbosch	SAM

Thanks are due to the Curator of the Bolus Herbarium and Director of the National Herbarium, Pretoria, for the loan of their collections; and for facilities provided for the examination of specimens during a visit to England and Europe in 1949, I have to thank the Directors and Curators of institutions mentioned in the above list.

ANAPALINA

N. E. Br., Trans. Roy. Soc. S. Afr. 20: 274 (1932); Lewis in Adamson & Salter Fl. Cap. Pen. 246 (1950); Phillips Gen. S. Afr. Fl. Pl. ed. 2, 222 (1951).

Corm deep-seated, globose or subglobose; tunics of matted moderately fine to coarse fibres extending up in a long neck. *Stem* firm, usually rigid and simple. *Basal leaves* few, sometimes absent at flowering time, petiolate, erect or suberect, linear-lanceolate, lanceolate or ensiform, firm, more or less coriaceous, prominently 2—5-nerved; *cauline leaves* fairly long, brown and firmly involute, appearing terete, or very much reduced and bract-like, sometimes only vestigial traces. *Spike* fairly to very dense, usually many-flowered, distichous or spirally arranged. *Bract* and *bracteoles* shorter than the perianth tube, alike or nearly so, the latter completely united and slightly longer than the bract, mostly dry, brown or reddish and fairly firm to rigid at time of flowering. *Flowers* medianly zygomorphic, proterandrous; *perianth tube* curved, narrowly cylindric and striate below, widening gradually into an upper broadly cylindrical part; *lobes* subequal or more often the dorsal longer than the others and projected forward, sometimes with the upper half becoming recurved, the other 5 becoming variously reflexed or recurved as the flower matures. *Stamens* arising at the base of the dilated part of the tube, at first arcuate, usually reflexed later; filaments long, filiform, slightly expanded at the base, exserted from the tube; anthers dorsifixed, linear-sagittate, often shortly apiculate. *Ovary* small, oblong-cylindric or ellipsoid; style long, the 3 branches short, usually cuneate, sometimes emarginate or very shortly bilobed, occasionally oblanceolate and conduplicate. *Capsule* more or less ellipsoid, longer than the bracts; seeds many, light, irregularly angled or 4-sided, winged on the angles.

Fairly frequent on rocky hill and mountain slopes in the south-western and southern districts of the Cape Province from Calvinia and Vanrhynsdorp to East London.

The name is derived from the Greek *anapalin*, in reversed order, in reference to the bracteoles being longer than the bracts.

The type species is *A. triticea* (Burm. f.) N. E. Br.

Key to the Species.

1. Basal leaves with very long slender petioles extending 20 cm. or more above ground; upper and lower cauline leaves alike, fairly long, brown and firmly involute, appearing terete.
  2. Perianth tube 2·5—3 cm. long; dorsal lobe about 1·5 cm. long, the other 5 subequal, not more than 1·2 cm. long .. 1. *triticea*
  2. Flowers larger than above, the perianth tube 3—4 cm. long and dorsal lobe usually 2—2·5 cm. long; upper lateral lobes up to 2 cm. long, 2—3 mm. longer than the 3 lower.. .. 2. *burchellii*
1. Basal leaves with slender or flattened petioles seldom extending much above ground, only occasionally up to 12 or 15 cm.; cauline leaves few and not conspicuous, the 1—3 upper much reduced, usually very short and bract-like or only vestigial traces.
  3. Flowers not bilabiate, the lobes not arising obliquely from the perianth tube.
    4. Perianth lobes subequal or the dorsal slightly longer than the others, all more or less oblong or ovate-oblong and very shortly unguiculate .. .. 3. *pulchra*
    4. Perianth lobes unequal, the dorsal distinctly longer than the other 5, all long unguiculate and more or less spathulate, narrowly spathulate or oblanceolate .. .. .. 4. *longituba*
  3. Flowers more or less bilabiate with the lobes arising obliquely from the perianth tube, either the 3 lower arising beyond the dorsal or the dorsal beyond the 3 lower.
    5. Anterior perianth lobe arising 3—5 mm. beyond the dorsal lobe .. .. 5. *nervosa*
    5. Dorsal perianth lobe arising 3—8 mm. beyond the anterior lobe.
      6. Basal leaves ensiform or linear-ensiform, much shorter than the stem; lower perianth lobes with dark purple-black marks at the base, the anterior arising 3—5 mm. lower than the dorsal .. .. 6. *intermedia*
      6. Basal leaves lanceolate or linear-lanceolate, not much shorter than the stem; lower perianth lobes not marked with purple-black, the anterior arising 6—8 mm. lower than the dorsal .. .. 7. *caffra*

1. **A. triticea** (Burm. f.) N. E. Br. (Fig. 1A), Trans. Roy. Soc. S. Afr. 20: 275 (1932); Lewis in Adamson & Salter Fl. Cap. Pen. 246 (1950). *Ixia triticea* Burm. f. Fl. Cap. Prodr. 1 (1768). *Antholyza triticea* (Burm. f.) N. E. Br., Kew Bull. 1929, 136. *A. lucidor* L. f. Suppl. 96 (1781); Thunb. Prodr. 7 (1794), Diss. Antholyza No. 1 (1803) et Fl. Cap. 1: 162 (1811); Willd Sp. 1: 221 (1798); Ker in Konig & Sims Ann. 1: 233 (1805) et Gen. Irid. 156 (1827); Dur. & Schinz Consp. Fl. Afr. 5: 229 (1895); Baker, Fl. Cap. 6: 170 (1896); Pole Evans, Fl. Pl. S. Afr. 9, t. 359 (1929). *Watsonia lucens* Pers. Syn. 1: 42 (1805). *W. lucidior* Eckl. Top. Verz. 36 (1827). *W. pottbergensis* Eckl. l.c., *nomen nudum*. *W. tigrina* Eckl. l.c., *nomen* *nudum.* *Homoglossum lucidor* (L. f.) Baker, Journ. Linn. Soc. 16: 161 (1877). *Gladiolus lucidor* (L. f.) Baker Handbk. Irid. 227 (1892).

Corm subglobose, 2·5—4 cm. diam.; tunics reddish brown, the outer fairly coarse and inner submembranous, those of the neck thicker and coarser, the neck usually 10—20 cm. long, rarely less. *Stem* simple, often somewhat flexuose, 40—75 cm. high, 2·5—4 mm. diam. near the base. *Basal leaf* usually solitary, produced before the flowers, the petiole long, slender, terete, extending 20—30 cm. above ground, the blade coriaceous, lanceolate, 20—35 cm. long, 0·7—1·1 cm. wide, 2—3-nerved; *cauline leaves* 6—8, very narrow, firmly involute and appearing terete, 25—5 cm. long, brown at time of flowering. *Spike* 8—14 cm. long, closely many-

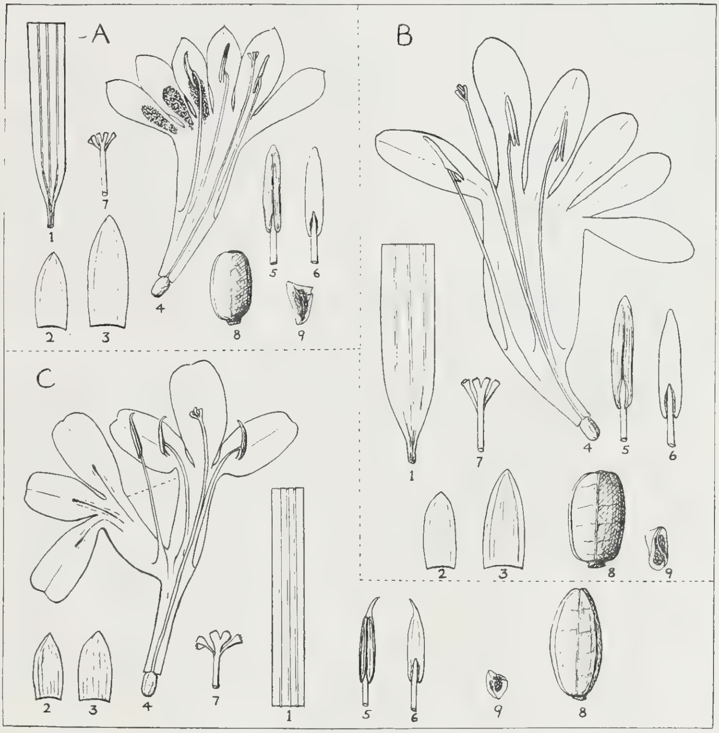

Fig. 1.—A. *A. triticea.* B. *A. burchellii.* C. *A. pulchra.*
1. Part of leaf. 2. Bract. 3. Bracteoles. 4. Flower laid open. 5. Anther and part of filament, front view, × 2. 6. Same, back view, × 2. 7. Top of style × 2. 8. Capsule. 9. Seed. *Del.* G. J. Lewis.

flowered, spirally arranged. *Bract* and *bracteoles* brown, coriaceous, rigid, oblong or oblong-lanceolate, acute or subobtuse, the bract 1—1·2 cm. long and bracteoles 1·3—1·9 cm. long. *Flowers* bright red or scarlet, the 3 lower lobes with a small or large dark red or blackish mark in the lower half; *perianth tube* 2·5—3 cm. long, the lower portion 0·8—1 cm. long; *lobes* arising very slightly obliquely, not or scarcely unguiculate, obtuse or acute, the dorsal about 1·5 cm. long, 5—6 mm. wide, arcuate, the others subequal, oblong or obovate-oblong, 1—1·2 cm. long, about 5 mm. wide, firmly recurved and more or less revolute. *Stamens* arising about 1·2 cm. above base of perianth tube; filaments 2—2·3 cm. long; anthers 6—8 mm. long, with a very short obtuse apiculus less than 1 mm. long. *Ovary* more or less ellipsoid, 3—4 mm. long; style 3—3·5 cm. long, the branches 1·5—2 mm. long, cuneate or the upper half cuneate, occasionally shortly bilobed. *Capsule* dark brown, broadly ellipsoid or somewhat rectangular, 1·2—1·4 cm. long; seeds reddish brown, 5—6 mm. long, narrowly winged.

Rocky mountain slopes from the Stellenbosch Division to the Cape and eastwards to the Mossel Bay Division.

TYPE. *Burmann* in Herb. Delessert, Geneva.

Flowering period. January—April.

STELLENBOSCH. Veld near Stellenbosch, *Letty* 290 (PRE).

CAPE. Camps Bay, lower Blinkwater, *Cassidy* 132 (NBG); Kloof Nek, *Marloth* 5612 (PRE); Lions Rump, *Thode* A 53 (K, PRE); Table Mt., *Prior* (K, PRE); *Rogers* 16989 (K, PRE); *Ventenat* (G); *Zeyher* 3997 (SAM); Devils Peak, *Pappe* (K, SAM); *MacOwan*, HNAA 1660 (K, SAM, UPS); *Ecklon* 88 (G, K, PRE); *Esterhuysen* 10038 (BOL); Devils Peak, near Rondebosch, *Bolus* 4528 (BOL, K, SAM); Table Mt., above Wynberg, *MacOwan* 2420 (SAM); Kirstenbosch, near Window Stream, *Esterhuysen* 25563 (BOL); Constantia, *Thunberg* (UPS); *Kies* 8 (NBG); Steenberg, *Kensit* (No. 26792 in BOL); near Chapmans Peak, *Dod* 930 (BOL, K); Klaver Valley, *Barker* (No. 26795) in BOL); Simonstown, *Schlechter* 336 (K); *Flanagan* 2426 (PRE).

CALEDON. Hottentots Holland Mts., *Zeyher* 65, partly (K); *Verreaux* (G); Hermanus, *Pole Evans* 8268 (PRE); *Martin* 303 (NBG); Rivier Sonderend, *Zeyher* 3997 (SAM); *Lewis* 2339 (SAM).

SWELLENDAM "Craggy Peak", near Swellendam, *Burchell* 7371 (K); Swellendam, *Kuntze* (K); *Thode* A 2397 (PRE); plateau of Ten O'Clock Mt., *Wurts* 554 (NBG).

RIVERSDALE Garcias Pass, *Lewis* 5441 (NBG); near Riversdale, *Ferguson* (No. 26793 in BOL).

MOSSEL BAY. Cloetes Pass, *Zinn* (No 54605 in SAM)

WITHOUT LOCALITY *Bowie* 374 (G); *Burmann* (G, named *Ixia* *triticea*); *Ecklon* 187 (G); *Jussieu* 3631 (P, received from Thunberg in 1787); *Jussieu* 3647 (P); *Thunberg* (UPS); *Thunberg* 469 (LINN, sheet 60·9, type of *Antholyza lucidor*)

In the form from the Swellendam to Riversdale Divisions the flowers are a paler red, with the 3 lower lobes marked with dark red. An incomplete specimen from the Skurfdeberg, east of Citrusdal in the Ceres Division (*Primos*, No. 45701 in the South African Museum Herbarium) appears to be this species but the dorsal perianth lobe is much longer than normal and the locality is unusual for *A. triticea*.

N. E. Brown, in a paper on the Iridaceae of Burmann's Florae Capensis Prodromus (Kew Bull. 1929, pp. 129–39), pointed out that *Ixia triticea* Burm. f. had been mistaken by several authors for *Micranthus platagineus* (Ait.) Eckl.; on examining Burmann's specimen he found it to be identical with the plant described by the younger Linné as *Antholyza lucidor* and he therefore restored the older epithet, naming it *A. triticea*. Three years later he transferred this species to his new genus *Anapalina*, as the type of the genus. The mistake of earlier authors was repeated by Merrill in 1938 when, in a paper on Houttuyn's New Genera and New Species, he cited *Ixia triticea* Burm f. in the synonymy under *Micranthus alopecuroides* (L.) Eckl. (Arnold Arb. Journ. 19: 139); from this and his reference to *Antholyza revoluta* Burm. f. (l.c. 326), it is evident that he had not seen N. E. Brown's papers of 1929 and 1932.

Watsonia pottbergensis and *W. tigrina* Eckl. have been cited above in the synonymy, though it is uncertain whether Ecklon's plants belong to this species or the following since he gave no descriptions and I have not seen any specimens of his bearing these names. From the localities he gave, it is very possible that they are *Anapalina burchellii* rather than *A. triticea*, but this cannot be decided without seeing the specimens.

2. **A. burchellii** N. E. Br. (Fig. 1B), Trans. Roy. Soc. S. Afr. 20: 275 (1932). *Antholyza burchellii* N. E. Br., Kew Bull. 1929, 136.

Corm, stem, leaves, spike, bract and *bracteoles* as in *A. triticea* but slightly larger and longer, the stem up to 90 cm. high and 3—5 mm. diam. near the base. *Basal leaf* up to 1·3 cm. wide, 3—4-nerved. *Spike* up to 18 cm. long. *Bract* up to 1·5 cm. long and *bracteoles* to 2·3 cm. *Flowers* red, similar to those of *A. triticea* but larger and with comparatively longer lobes, the 3 lower usually without dark marks at the base; *perianth tube* 3—4 cm. long, the basal portion 1·2—1·5 cm. long; *lobes* arising slightly obliquely, the anterior slightly lower than the dorsal, all subunguiculate, more or less oblong or spathulate-oblong, obtuse or subacute, the dorsal 2—2·5 cm. long, usually 7—8 mm. wide, the others 6—7 mm. wide, the upper lateral up to 2 cm. long, 2—3 mm. longer than the 3 lower. *Stamens* arising about 1 cm. above the base of the tube; filaments 3—3·7 cm. long; anthers 0·8—1 cm. long, with an obtuse apiculus less than 1 mm. long. *Ovary* 3—4 mm. long; style 4·5—6 cm. long, the branches 1·5—2 mm. long, fairly broadly cuneate, occasionally emarginate or shortly bilobed. *Capsule* and seeds as in *A. triticea.*

Rocky mountain slopes in most of the south-western districts from Malmesbury, Tulbagh, Ceres and Worcester to Caledon and coastal districts from there to Riversdale, but not on the Cape Peninsula.

TYPE. *Burchell* 8013 in Kew Herbarium.

Flowering period. January—April.

MALMESBURY. Riebeek Kasteel, *Zinn* (No. 54235 in SAM); *Pillans* 6097 (BOL).

TULBAGH. Great Winterhoek, 3,000 ft., *Compton* 4637 (BOL).

CERES. *Rogers* 17596 (G).

WORCESTER. Bains Kloof, *Gillett* 794 (BOL, K); *Stokoe* (No. 55584 in SAM); *Compton* 17935 (NBG); *Leighton* 1625 (BOL); Boschjesveld Mts., *Stokoe* (No. 55583 in SAM).

PAARL. Klein Drakenstein Mts. and slopes near Salem, *Galpin* 10598 (K, PRE); Paarl Mts., *Drege* (K); Du Toits Kloof, *Dyer* 5340 (PRE); *Esterhuysen* 22777 (BOL); French Hoek, *Rogers* 17525 (G, PRE); Klapmuts, *Lewis* 5355 (NBG); bottom of Franschhoek Pass, *Wilman* 187 (BOL).

STELLENBOSCH. Jonkershoek. *Rycroft* 2146 (NBG); *Steyn* 3 (NBG).

SOMERSET WEST. Vergelegen, *Johnson* (NBG).

CALEDON. Hottentots Holland Mts. above Steenbras Reservoir, *Galpin* 12561 (K, PRE); near Steenbras Reservoir, *Salter* 4329 (BOL); 5222 (K); top of Sir Lowrys Pass, *Wilman* 172 (BOL); Houwhoek, *Guthrie* 2317 (NBG); Elgin, *Smith* 2559 (K, PRE); Palmiet River Valley near Elgin, *Stokoe* (No. 55609 in SAM); Palmiet River Mts., *Barnard* (No. 40464 in SAM); Caledon, *Purcell* (No. 46267 in SAM); *Ryder* 114 (K); Donkerhoek Mts., *Burchell* 7962 (K); upper part of the Great Mt. of Baviaans Kloof, *Burchell* 7962/2 (K); between Donkerhoek and Houwhoek Mts., *Burchell* 8013 (K); Genadendal, *Gillett* 842 (BOL); *Roser* (PRE); Greyton, *Gillett* 864 (BOL); slopes of Babylons Tower, *Zinn* (No. 53687 in SAM).

BREDASDORP. South of Napier, *Barker* 7252 (NBG); Strandkloof, *Leighton* 1639 (BOL).

SWELLENDAM. Between Storms Vlei and Bonnievale, *Dyamond*, N.B.G. 1951/33 (BOL, NBG).

RIVERSDALE. Near Zoetmelks River, *Burchell* 6699 (K).

This species is very similar to *A. triticea,* with which it has been confused in the past. The habit and leaves are the same but the flowers are nearly always considerably larger and rarely have dark markings on the lobes, which are more or less unguiculate, longer and more irregular than in *A. triticea*.

3. **A. pulchra** (Baker) N. E. Br. (Fig. 1C), Trans. Roy. Soc. S. Afr. 20: 275 (1932). *Antholyza pulchrum* Baker, Fl. Cap. 6: 531 (1896). *Homoglossum pulchrum* Schltr. in Engl. Jahrb. 24: 453 (1898).

Corm ovoid or subglobose, 2—3 cm. diam.; tunics of moderately firm reddish brown fibres becoming coarser in the neck, the neck 7—14 cm. long. *Stem* simple or occasionally with 1 short suberect branch, flexuose just above the neck, otherwise straight, 25—50 cm. high, 1·5—3 mm. diam. near the base. *Basal leaves* 3—5, coriaceous, often dead at time of flowering, the petioles slender, extending shortly above ground, the blades lanceolate, linear-lanceolate or linear, 20—40 cm. long, 3—6 mm. wide, 2—3-nerved, sometimes minutely ciliate at the apex; *cauline leaves* 3—5, the 1—3 lower subulate, 5—1·5 cm. long, the upper 1 or 2 very much reduced, the uppermost sometimes only a vestigial trace. *Spike* 5—15 cm. long, fairly closely 7—20-flowered, spirally arranged. *Bract* and *bracteoles* pale or reddish brown, usually firm, oblong, acute, the bract 0·8—1·2 cm. long and bracteoles 0·9—1·3 cm. *Flowers* carmine, purplish red or dark pinkish red, the 3 lower lobes usually marked in the lower half with a dark red medial line between 2 white lines; *perianth tube* 3—3·3 cm. long, the lower portion about 1·5 cm. long; *lobes* arising from the same level, ovate, oblong or obovate-oblong, often the inner oblong and outer more or less ovate, all very shortly unguiculate, obtuse, the dorsal 1·5—1·9 cm. long, 0·8—1 cm. wide, the others subequal, 1·2—1·5 cm. long, 7—9 mm. wide. *Stamens* arising 1·5—1·7 cm. above base of perianth tube, reaching to the middle of the dorsal lobe or shortly above; filaments 2—2·3 cm. long; anthers 6—7 mm. long, with an acuminate obscurely bifid apiculus 1—1·5 mm. long. *Ovary* 3—4 mm. long; style about 4 cm. long, the branches 2—3·5 mm. long, cuneate or the upper half cuneate, sometimes shortly bilobed. *Capsule* pale brown, ellipsoid, about 1·6 cm. long; seeds reddish brown, about 2—3 mm. long, shortly winged.

Rocky hill and mountain slopes in the Caledon and Bredasdorp Divisions.

TYPE. *Schlechter* 7611 in Kew Herbarium.

Flowering period. February—June.

CALEDON. Moordenaarskop, Hottentots Holland Mts., *Stokoe* (No. 59831 in SAM); Elgin, *Linley* (No. 60153 in SAM); Kogelberg, *Compton* 19396 (NBG); Palmiet River Mts., *Barnard* (No. 40463 in SAM); *Jackson*

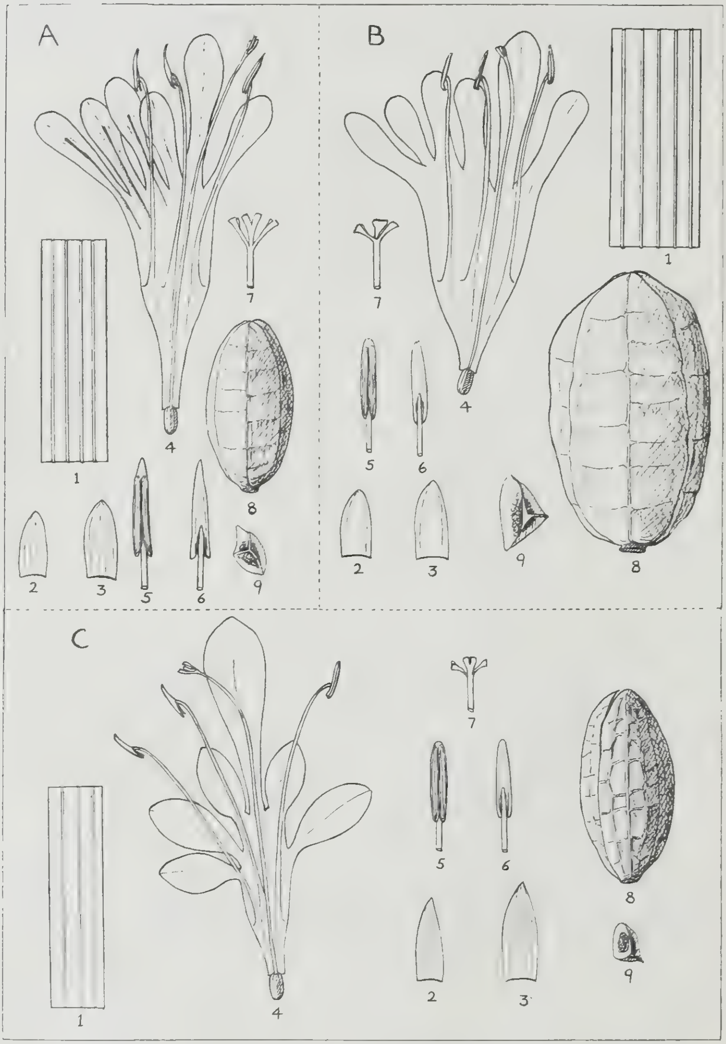

FIG. 2.—A. *A. longituba.* B. *A. nervosa.* C. *A. caffra.*
1. Part of leaf. 2. Bract. 3. Bracteoles. 4. Flower laid open. 5. Anther and part of filament, front view, × 2. 6. Same, back view, × 2. 7. Top of style × 2. 8. Capsule. 9. Seed. *Del.* G. J. Lewis.

(NBG); Paardeberg, *Stokoe* (No. 60128 in SAM); Shaws Pass, *Galpin* 12779 (PRE); *Barker* 6105 (NBG); slopes of Babylons Tower, *Esterhuysen* 5001 (BOL, NBG, PRE); *Stokoe* 6837 (BOL); *Zinn* (No. 53688 in SAM); mountains near Danger Point, *Linley* (No. 60152 in SAM); hill N. of Caledon Baths, *Marloth* 11086 (PRE); *L. Bolus* (No. 20448 in BOL, K); hills near Caledon, *Bolus*, s.n. (BOL); River Sonderend Mts., 5,200 ft., *A. Bolus* in Herb. Guthrie 4605 (BOL).

BREDASDORP. Elim, *Schlechter* 7611 (BOL, G, K, PRE); Stanford to Pearly Beach road, *Martin* 337 (NBG); hills above Pearly Beach, *Lewis* 2282 (SAM); *Martin* 344 (NBG); Strandkloof, *Leighton* 1638 (BOL); near Napier, *van Breda* 532 (PRE).

4. **A. longituba** Fourc. (Fig. 2A), Trans. Roy. Soc. S. Afr. 21: 76 (1932). *Antholyza spicata* Brehm. ex Klatt Erganz. 11 (1882); Baker Handbk. Irid. 229 (1892) et Fl. Cap. 6: 167 (1896); non Mill. (1768). *Anapalina revoluta* N. E. Br. Trans. Roy. Soc. S. Afr. 20: 275 (1932), *pro parte*.

Corm more or less globose, 3—6 cm. diam.; tunics thick and matted, of coarse wiry dark reddish brown fibres with a neck 7—15 cm. long. *Stem* simple or with 1 or rarely 2 very short erect branches, straight or with a slight curve near the base, 25—85 cm. high, usually 35—60 cm., 3—6 mm. diam. near the base. *Basal leaves* usually 3—4, present at time of flowering, with narrow somewhat flattened petioles extending shortly above ground, the blades ensiform or lanceolate, acuminate, coriaceous, 20—40 cm. long, 0·8—1·5 cm. wide, with 3—4 or occasionally 5 prominent nerves; *cauline leaves* 3—5, the lower 1—2 lanceolate or subulate, occasionally up to 10 cm. long but usually less, the upper 1—3 very much reduced, usually bract-like. *Spike* 5—15 cm. long, fairly closely 7—many-flowered, spirally arranged. *Bract* and *bracteoles* dark reddish brown, rigid, lanceolate or ovate-lanceolate, acute, the bract usually 1—1·2 cm. long and bracteoles 2—3 mm. longer. *Flowers* bright rose-red or dark pinkish to purplish red, the 3 lower lobes usually marked in the lower half with a dark medial line between 2 white lines; *perianth tube* 2·8—4 cm. long, the slender lower part 1·5—2·5 cm. long; *lobes* springing from the same level or occasionally the anterior arising about 1 mm. or less beyond the dorsal but the lower lobes not connate in a lip, all unguiculate, spathulate, narrowly spathulate or oblanceolate, obtuse or emarginate, the dorsal 2·3—3 cm. long, 5—7 mm. wide, at first projecting forward, the upper half later becoming recurved, the others subequal, 1·5—2·4 cm. long, 3—5 mm. wide, the blades soon becoming recurved. *Stamens* arising 2—2·5 cm. above base of perianth tube, reaching to middle or apex of blade of dorsal lobe; filaments 3—4 cm. long; anthers 6—8 mm. long, with an acute or acuminate apiculus 1—1·5 mm. long. *Ovary*

3—5 mm. long; style 5—6 cm. long, the branches 3—4 mm. long with the upper half cuneate, often emarginate, or shortly bilobed. *Capsule* dark reddish brown, hard and scarcely inflated, more or less ellipsoid, up to 2·5 cm. long; seeds reddish brown, 4—5 mm. long, shortly winged.

Recorded at altitudes over 1,000 ft., mostly 2,500—5,000 ft., on mountain slopes extending from the Calvinia Division to Paarl and in the Prince Albert and Uniondale Divisions.

TYPE. *Fourcade* 2063, Herb. Fourcade in the Bolus Herbarium.

Flowering period. November—March, usually January—March.

CALVINIA. Nieuwoudtville, *Leipoldt* (No. 26791 in BOL).

CLANWILLIAM. Bosch Kloof, Cedarberg, 3,500 ft., *Compton* 6308 (NBG); Apollo Peak, S. Cedarberg, 5,000 ft., *Esterhuysen* 25524 (BOL); Cedarberg, *Lamb*, N.B.G. 1622/30 (BOL).

PIKETBERG. Piketberg Mt., *Zinn* (No. 54428 in SAM).

TULBAGH. Great Winterhoek, *Compton* 4656 (BOL, NBG); *Phillips* 1877 (PRE); *Galpin* 12579 (K, PRE).

CERES. Visgat, upper Olifants River Valley, *Esterhuysen* 13390 (BOL); Valsch Gat Kloof, 4,000 ft., *Esterhuysen* 1545 (BOL); near Ceres, *Bolus* 8330 (BOL); *Guthrie* 2207 (NBG); *Leslie*, Herb. Marloth 6381 (PRE); N.B.G. 45/32 (BOL); Agter Witsenberg, *Lewis* 5366 (NBG); Skurfdeberg, E. of Citrusdal, *Primos* (No. 45700 in SAM); Roodeberg, 5,000 ft., *Compton* 8394 (NBG).

WORCESTER. Bains Kloof, *Kies* (NBG); Goudini, *Letty* (PRE); Matroosberg, *Phillips* 2074 (SAM).

PAARL. Paarl Mt., 1,000—2,000 ft., *Drege* (No. 37559 in SAM); Paarlberg, *Drege* 1576 (P); Du Toits Kloof, *Loubser* 479 (NBG); *Drege* 1576 (K, one flower and photograph, type of *Antholyza spicata*); Haalhoek Sneeuwkop, 4,500 ft., *Esterhuysen* 15187 (BOL).

PRINCE ALBERT. Spitzkop, about 5 miles W. of Meirings Poort, *Thorne* (No. 50188 in SAM).

UNIONDALE. Kamanassie Mts., Mannetjieberg, 4,000 ft., *Esterhuysen* 18385 (BOL, PRE); *Compton* 10547 (NBG); S. slopes of Slypsteenberg, N. of Warm Baths, 3,200 ft., *Fourcade* 4977 (BOL); Prince Alfreds Pass, 2,900 ft., *Fourcade* 2063 (BOL); Avontuur Poort, 2,450 ft., *Fourcade* 4954 (BOL).

Nearly all herbarium material of *A. longituba* has up to now been placed in the following species although it can be readily distinguished by the flowers, which are darker in colour and in nearly all cases have the lower portion of the perianth tube considerably longer. The species are closely allied, with the same habit and basal leaves, but *A. longituba* is distinguished from *A. nervosa* by the following characters: (i) The rudimentary cauline leaves are slightly more developed and the upper

1 or 2 are usually very short and bract-like instead of minute vestigial traces. (ii) The spike is less dense. (iii) The lower portion of the perianth tube is comparatively longer and the lobes arise from the same level or almost so and are all free, with longer claws, those of the 3 lower not connate in a lip at the base. (iv) The apiculus of the anthers is longer and more acute and the style branches are slightly longer. (v) The capsule is smaller, harder and darker in colour, with darker and smaller seeds.

Baker upheld *Antholyza spicata* Brehm. ex Klatt as a distinct species but N. E. Brown sank it under *Anapalina revoluta* (i.e. *A. nervosa* (Thunb.) Lewis). The name *Antholyza spicata* is illegitimate as there are two earlier homonyms, *A. spicata* Mill. (1768) (= *Gladiolus milleri* Ker) and *A. spicata* Andr. (1799) (= *Watsonia brevifolia* Ker).

5. **A. nervosa** (Thunb.) Lewis comb. nov. (Fig. 2B). *Antholyza nervosa* Thunb. Prodr. 7 (1794), Diss. Antholyza No. 3 (1803), Fl. Cap. 1: 164 (1811) et ed. Schultes 39 (1823); Willd. Sp. 1: 222 (1798); Ker in Bot. Mag. sub t. 1172 (1809) et Gen. Irid. 156 (1827); Eckl. Top. Verz. 34 (1827); Dur. & Schinz Consp. Fl. Afr. 5: 229 (1895); Baker in Fl. Cap. 6: 170 (1896); Marloth Fl. S. Afr. 4: 161, t. 50 A (1915). *Gladiolus nervosus* (Thunb.) Baker Handbk. Irid. 228 (1892). *G. antholyza* Poir. in Lam. Encyc. Suppl. 2: 795 (1811). *Anapalina revoluta* (Burm. f.) N. E. Br., Trans. Roy. Soc. S. Afr. 20: 275 (1932); Lewis in Adamson & Salter Fl. Cap. Pen. 246 (1950); *nomen rejectum.* ? *Antholyza revoluta* Burm. f. Fl. Cap. Prodr. 1 (1768); *nomen rejectum.*

Corm globose or depressed-globose, 3—6 cm. diam.; tunics thick and matted, of coarse wiry reddish brown fibres, those of the neck coarser and bristly, 7—15 cm. long. *Stem* simple, straight or with a slight curve near the base, 20—90 cm. high, usually 25—40 cm., 3—6 mm. diam. near the base. *Basal leaves* 3—6, equitant, usually present at flowering time but rarely enclosing the base of the stem, the petioles flattened, extending very shortly above ground, the blades coriaceous, ensiform or lanceolate, acuminate, often attenuate, 15—30 cm. long, 0·8—2 cm. wide, prominently 3—5-nerved (rarely 6); *cauline leaves* 3—5 ,very much reduced, the lowest sometimes lanceolate and up to 7 cm. long, the upper 1—3 usually minute vestigial traces. *Spike* 7—20 cm. long (average 12 cm.), closely many-flowered, the rachis nearly always spirally twisted. *Bract* and *bracteoles* brown or reddish brown, coriaceous, rigid, oblong or ovate-lanceolate, subobtuse, acute or acuminate, the bract 0·8—1·5 cm. long and bracteoles 1—3 mm. longer. *Flowers* subbilabiate, dull pink, pale or bright red or salmon-pink; *perianth tube* 2·5—3 cm. long, the basal portion 0·8—1·5 cm. long, usually distinctly shorter than the upper part;

lobes arising obliquely, the upper lateral shortly connate with the 3 lower in a slightly projecting lip with the anterior arising 3—5 mm. beyond the dorsal, all unguiculate, oblanceolate, narrowly spathulate or with oblong blades, obtuse or subacute, sometimes very shortly apiculate; dorsal lobe 2·2—3 cm. long, 4—5 mm. wide, projecting forward but the blade soon becoming recurved, the claw nearly as long as the blade; upper lateral and 3 lower lobes recurved, with much shorter claws and blades 3—4 mm. wide, the upper lateral 1·5—1·8 cm. long, the lower lateral 1·2—1·5 cm. long and anterior 1—1·4 cm. long. *Stamens* arising 1—1·5 cm. above base of perianth tube, at first arcuate, later ascending and finally reflexed; filaments 3·2—4 cm. long; anthers 5—8 mm. long, the apiculus very short, obtuse or acute, usually less than 1 mm. long, sometimes wanting. *Ovary* 3—4 mm. long; style about 4·5—5 cm. long, the branches cuneate, 1·5—2 mm. long. *Capsule* pale reddish brown, subglobose to ellipsoid-globose, inflated, 2—4 cm. long; seeds pallid, 0·8—1·4 cm. long, broadly winged.

Fairly common on stony and sandy mountain slopes and plateaux from Vanrhynsdorp Division to the Cape, in the Worcester, Montagu and Robertson Divisions and along the southern coastal districts from Caledon to Port Elizabeth.

TYPE. *Thunberg* in Herb. Thunberg, Botanical Museum, Uppsala.

Flowering period. Usually December—March but sometimes also at other times.

VANRHYNSDORP. Giftberg, *van Son* (PRE).

CLANWILLIAM. Pakhuisberg, *Schlechter* 8646 (K, PRE); Pakhuis Pass, *Leipoldt* (BOL); Niewhoud Pass, foot of Cedarberg, *Lamb* (No. 26790 in BOL); Cedarberg, slopes of Steenrug Mt., *Pocock* 760 (PRE); foothills near Algeria Forest Station, *Galpin* 10519 (PRE).

PIKETBERG. Hills W. of Moutons Vlei, *Pillans* 7274 (BOL); Kapiteins Kloof, *Pillans* 7807 (BOL); Piketberg, *Theiler* 43 (PRE).

TULBAGH. Near Saron, *Schlechter* 10664 (G, K, PRE).

WORCESTER. Goudini, *de Villiers*, N.B.G. 505/36 (NBG).

PAARL. French Hoek, *Rogers* 17525 (K); *Strey* 2973 (PRE); Fransch Hoek Pass, *Rodin* 3070 (BOL, PRE).

CAPE. Camps Bay, *Burchell* 314 (K); *Cassidy* 110 (NBG); lower Blinkwater, *Cassidy* 119 (NBG); Kanonberg, *Salter* 1917 (K); Signal Hill, *Kinges* 3500 (PRE); Lions Rump, *Thode* A 54 (PRE); Cape Town, *Rogers* 16157 (G, K); *Marloth* 394 (PRE); Table Mt., *Ecklon* 33 (G, K, PRE); *MacOwan* 1659 (K, SAM, UPS); Muizenberg, *Bolus* 4870 (BOL, K); mountain at Kalk Bay, *Pappe* (No. 21531 in SAM); Kommetjie, *Barker* 457 (NBG); Glencairn Mt., *Martin* 1675 (G); Simonstown, *Schlechter* 335

(K); Smitswinkel, *Dod* 832 (K); *Middlemost* 1674 (NBG); Cape Point, *Cook*, N.B.G. 1387/28 (BOL).

CALEDON. Hottentots Holland Mts., *Ecklon* 65, partly (K, SAM); mountains S. of Gordons Bay, *Marloth* 10005, 10105 (PRE); Hangklip, *Pillans* 8225 (BOL); near Grabouw, *Maguire* 1229 (NBG); Viljoens Pass, *Rogers* 28987 (SAM) Aries Kraal, Palmiet River Valley, *Lewis* 931 (SAM); *Leighton* 802 (BOL); *Barker* 3360 (NBG); Sondags Kloof, *Bond* 773 (NBG); Kleinmond, *Whellan* 1487 (PRE); Caledon, *Pappe* (No. 21532 in SAM); Hermanus, *Leighton* 361 (BOL, NBG); Danger Point Mt., *Leighton* 1570 (BOL).

BREDASDORP. Rhenosterbos flats on Struis Bay road, *Galpin* 11255 (PRE); Bredasdorp, mountain side, *Galpin* 11352 (K, PRE); Baardscheerdersbosch, *Stokoe* (No. 59830 in SAM).

SWELLENDAM. Pottberg, *Barker* 5238 (NBG); *David* (NBG); Tradouw Pass, *Wurts* 562 (NBG); *Barker* 5050 (NBG); Barrydale, *Galpin* 4729 (PRE).

MONTAGU. Langeberg, near Montagu, *Esterhuysen* 23888 (BOL).

ROBERTSON. Boesmans Kloof Pass, McGregor, *Leipoldt* 3579 (BOL).

RIVERSDALE. Near Soetmelks River, *Burchell* 6642 (K); between Great Valsche and Soetmelks R., *Burchell* 6599 (K); Corente River, *Muir* 544 (SAM); Albertinia, *Patrick* (No. 26801 in BOL).

MOSSEL BAY. Ruytersbosch, *Gemmell* 5042 (PRE); Mossel Bay, *Moran* (PRE); Robinson Pass, *Hutchinson* 3152 (K); *Hops* 22 (BOL).

GEORGE. Montagu Pass, *Barker* 630 (NBG); Waboomskraal, *O'Conner* (PRE); Wilderness, hillside above Kaaimans River, *van Niekerk* 177 (BOL); between Wilderness and Knysna, *Barker* 623 (NBG); between George and Knysna, *Theron* 958 (PRE).

KNYSNA. Woodville, Knysna, *Middlemost* 2001 (NBG); Paardekop, *Barker* 6024 (BOL, NBG).

HUMANSDORP. Baviaans Kloof Mts., between Cambria and Combrink, *Lewis* 3535 (SAM); 7 miles W. of Cambria, *Story* 2456 (PRE); Uitvlugt, *Fourcade* 2615 (BOL); Companys Drift, *Fourcade* 2867 (BOL); near Kareedouw, *Britten* 1098 (PRE); Humansdorp, *Thode* A 1046 (PRE); Loerie Plantation, *Dix* 158 (PRE); 5 miles from Hankey on Loerie road, *Story* 2480 (PRE).

PORT ELIZABETH. Near Witteklip, *MacOwan* 1936 (K); near Galgebosch, *MacOwan* 1936 (SAM); 17 miles W. of Port Elizabeth, *Sidey* 3096 (PRE); between Port Elizabeth and Thornhill, *Barker* 674 (NBG); near Port Elizabeth, *Long* 485 (K, PRE); Algoa Bay, *Cooper* 1485 (K); Van Stadensberg, *Zeyher* 1633 (K, SAM); *Long* 196 (K); stony hills at Bethelsdorp, *Zeyher* 604 (K, SAM); Baakens River Valley, *Galpin* 9886 (K, PRE).

WITHOUT LOCALITY. *Prior* (K); *Commerson* (G); *Thunberg* (UPS and sheet 60.10 in LINN); *Bergius* (PRE).

In 1932, when N. E. Brown published the new combination *Anapalina revoluta*, his reason for giving priority to Burmann's specific epithet was explained in the following note: "As I have stated in Kew Bull. 1929: 131, there is no specimen now in Burmann's Herbarium of *Antholyza revoluta* Burm., but his description ('staminibus adscendentibus, corollis revolutis, foliis lanceolatis nervosis; 1757 mense Octobri floruit, scapus sesquipedalis teres, flores purpurei') seems so clearly to indicate this plant that there can scarcely be a doubt as to the correctness of this identification of it with *Antholyza nervosa* Thunb., as its lanceolate, prominently nerved leaves, revolute lobes and colour of the flowers so precisely agree with Burmann's description.

"The plant called *Antholyza revoluta* by South African botanists is a species of *Homoglossum* and does not in any way agree with Burmann's description of that species."

N. E. Brown was probably right in considering that Burmann's brief description applied to a species of *Anapalina*, but he was not correct in saying that Burmann's description of the colour of the flowers is precisely the same as Thunberg's, since the former described them as purple and the latter flesh-coloured. It is more likely that if Burmann's specimen was indeed a species of *Anapalina*, it was *A. longituba*, which has dark red or purplish red flowers, rather than the species described above (the differences between the two species are given in a note under *A. longituba*). However, there is no specimen in Burmann's Herbarium so the true identity of his plant remains open to doubt, and since the name *Antholyza revoluta* was used by Baker and several other authors—among them Merrill as recently as 1938 (see my note under *Anapalina triticea* in this paper)—for a species of *Homoglossum*, it seems to me that it should be regarded as being a source of error and rejected.

With the rejection of Burmann's name, the oldest available name for this species is the one by which it was well known for many years, viz. *Antholyza nervosa* Thunb., and for this reason Thunberg's specific epithet is used in the new combination as given above; the type is in his Herbarium and his detailed description is of this plant.

6. **A. intermedia** (Baker) Lewis comb. nov. *Antholyza intermedia* Baker Handbk. Irid. 230 (1892) et in Fl. Cap. 6: 156 (1896); Dur. & Schinz Consp. Fl. Afr. 5: 229 (1895). *Chasmanthe intermedia* (Baker) N. E. Br., Trans. Roy. Soc. S. Afr. 20: 273 (1932). *Petamenes intermedia* (Baker) Phill., Bothalia 4: 44 (1941). *Antholyza caffra* Banks ex Ker in Konig & Sims Ann. 1: 232 (1805) et Gen. Irid. 156 (1827). *nomen nudum;* non Baker (1892).

Corm not seen; neck as far as seen more than 8 cm. long, the fibres dark brown and apparently compacted into a hard cylinder. *Stem* simple, straight or with a slight curve near the base, 30—45 cm. high, 3—4 mm. diam. near the base. *Basal leaves* 3—7, present at time of flowering, equitant, with flattened petioles extending very shortly above ground, the blades coriaceous, ensiform or linear-ensiform, 10—15 cm. long, 0·7—1·5 cm. wide, fairly prominently 3—4-nerved; *cauline leaves* 2—3. 10—2·5 cm. long, the 1 or 2 lower lanceolate and the upper 1 or 2 subulate, *Spike* 15—24 cm. long, fairly closely 10—25-flowered, distichous. *Bract* and *bracteoles* pale reddish brown, firm or moderately firm, coriaceous or submembranous, lanceolate, acute or occasionally subacute, the bract 0·9—1·5 cm. long and bracteoles 1·3—1·8 cm. *Flowers* bright red, the 3 lower lobes black or purple-black at the base and usually a spot of the same colour at the base of the upper lateral lobes; *perianth tube* 2·5—3 cm. long, the lower portion 5—8 mm. long, passing gradually into the upper portion which is very slightly pouched at the base on the ventral side; *lobes* arising obliquely, the dorsal 3—5 mm. beyond the anterior and much longer than the other 5, all acute or subacute, the dorsal long-unguiculate, the 3 lower shortly unguiculate and the 2 upper lateral not or hardly so; dorsal lobe arcuate, spathulate, concave, 2·5—3 cm. long, 7—8 mm. wide near the apex; other 5 lobes subequal or the anterior slightly shorter than the lateral, all more or less oblong, 1·2—1·8 cm. long, 4—6 mm. wide. *Stamens* arising about 5—8 mm. above base of perianth tube, arcuate; filaments 4—4·5 cm. long; anthers 7—9 mm. long, obtuse, not apiculate. *Ovary* oblong, 4—5 mm. long; style 5—6 cm. long, the branches spathulate or oblanceolate, conduplicate, 3—4 mm. long, with the upper half minutely fimbriate and stigmatiferous. Mature capsule and seeds not seen but in the young stage they appear to be similar to those of *A. caffra*, with many irregularly angled seeds.

Rocky hill and mountain slopes in the Humansdorp, Uitenhage and Port Elizabeth Divisions.

TYPE. *MacOwan* 2070 in Kew Herbarium.

Flowering period. September—December.

HUMANSDORP. Loerie Plantation, *Dix* 114 (BOL, PRE); Baviaanskloof, *Esterhuysen* 25003 (BOL).

UITENHAGE. Winterhoek Mts., *Fries, Norlindh & Weimarck* 1190 (SAM); Uitenhage, *Loubser* 903 (NBG).

PORT ELIZABETH. Van Stadenshoogte, *MacOwan* 2070 (K); between Witteklip and Van Stadenshoogte, *Hallack* in Herb. MacOwan 2070 (BOL, SAM); Port Elizabeth, *West* 24 (K); *Matheson* (No. 59832 in SAM).

WITHOUT LOCALITY. *Zeyher* 31 (G); *Ecklon* (G); *Lamarck* (P); *Thunberg* (UPS, *Antholyza aethiopica* sheet b in Herb. Thunb.).

In the South African Museum Herbarium there is a specimen collected by Zeyher for which the locality is given as "Rivierzondereinde", and the flowering month April, but it is very unlikely that this is correct.

N. E. Brown's comments on the confusion about the name of this species are given under the following species, as well as my reasons for placing this and the following species in the genus *Anapalina*.

7. **A. caffra** (Baker) Lewis comb. nov. (Fig. 2C). *Antholyza caffra* Baker Handbk. Irid. 230 (1892) et in Fl. Cap. 6: 166 (1896), syn. excl.; non Ker (*nomen nudum*). *A. intermedia* Baker sec. Hay in Gard. Chron. Ser. 3, 95: 300, 309, fig. 146 (1934) et Journ. Roy. Hort. Soc. lix, 399: 182 (1934); non Baker (1892). *Chasmanthe caffra* (Baker) N. E. Br., Trans. Roy. Soc. S. Afr. 20: 273 (1932); Milne-Redhead in Curtis's Bot. Mag. t. 9470 (1937). *Petamenes caffra* (Baker) Phill., Bothalia 4: 44 (1941).

Corm globose, 2—4 cm. diam.; tunics of soft to fairly coarse brown fibres, the neck 12—20 cm. long. *Stem* 20—80 cm. high (average 40—50 cm.), 2—4 mm. diam. near the base, straight, simple or with 1 or occasionally 2 short suberect branches. *Basal leaves* 3—6, the petioles slender, extending 3—12 cm. or occasionally up to 15 cm. above ground, the blades lanceolate or linear-lanceolate, often attenuate, 25—50 cm. long, 0·4—1 cm. wide, more or less coriaceous, 2—3-nerved or occasionally with 4; *cauline leaves* 2—4, the lower 1 or 2 like the basal but much shorter, the upper 1 or 2 much reduced, subulate, often involute, 2·5—0·3 cm. long. *Spike* 7—30 cm. long, somewhat laxly 7—25-flowered, usually 15—20 cm. long and 15—18-flowered, distichous. *Bract* and *bracteoles* reddish or reddish brown, moderately firm, lanceolate, acute or acuminate, the bract 1·2—2 cm. long and bracteoles 1·5—2·2 cm. *Flowers* scarlet or dark red; *perianth tube* 2—3 cm. long, the lower portion 0·7—1 cm. long; *lobes* arising very obliquely, the dorsal 6—8 mm. beyond the anterior, all obtuse or subacute, sometimes the lower lateral obtuse and others subacute; dorsal lobe long-unguiculate, spathulate, subarcuate, 2·6—3·3 cm. long, about 1 cm. wide near the apex; upper lateral lobes and the anterior equal or the anterior sometimes slightly smaller than the other 2, all shortly unguiculate, oblong, 1—1·3 cm. long, 5—6 mm. wide; lower lateral lobes oblong or obovate-oblong, shortly unguiculate, 1·2—1·6 cm. long, 5—7 mm. wide; upper lateral lobes at first spreading and 3 lower reflexed, later all 5 more or less reflexed. *Stamens* arising 0·5—1 cm. above base of perianth tube, arcuate; filaments 3·3—3·8 cm. long; anthers 6—8 mm. long, obtuse, not apiculate. *Ovary* oblong, 3—4 mm. long; style 4·5—6 cm. long, the branches 2·5—

4 mm. long, usually with the upper half cuneate, sometimes emarginate or very shortly bilobed, rarely more or less oblanceolate and conduplicate. *Capsule* oblong or ellipsoid, slightly inflated, pallid or pale reddish brown, irregularly sculptured, 1·5—3 cm. long; seeds pale brown, up to 5 mm. long, irregularly angled and processed on the faces, fairly broadly winged on the margins.

Usually among rocks on hill and mountain slopes in the southern coastal districts from Heidelberg to East London.

LECTOTYPE. *Burchell* 6010 in Kew Herbarium.

Flowering period. Usually September—December but sometimes also at other times.

HEIDELBERG. Grootvadersbosch, *Middlemost* 1994 (NBG); Goede Hoop Farm, 1,000—1,500 ft., *Thorne* (No. 44502 in SAM).

RIVERSDALE. Langeberg, *Schlechter* 1755 (BOL); Garcias Pass, 1,200—2,000 ft., *Muir* 4355 (PRE); *Thorne* (No. 41619 in SAM); *Lewis* 5643 (NBG).

MOSSEL BAY. Cliffs above Back River, near Ruytersbosch, *van Niekerk* 60 (BOL, PRE); Robinson Pass, *Hops* 20 (BOL).

GEORGE. Lower slopes of Postberg, near George, *Burchell* 6010 (K); hills near George, *Schlechter* 2437 (BM, K, PRE); George, *Prior* (K); Montagu Pass, *Hutchinson* 1178 (K, NBG, PRE); *Martin* 85 (NBG); *Compton* 7579 (NBG); *Whellan* 1489 (PRE); Outeniqua Pass, c. 2,000 ft., *Barker* 7649 (NBG); *Lewis* 3543 (SAM); George Mt., 1,000 ft., *Compton* 7291 (NBG); Brooks Bosch Mt., 3,500 ft., *Thorne* (No. 51703 in SAM); Water House, George, *Guthrie* 4382 (BOL); Kaymansgat, *Drege* 3494 a (P); Silver River, George, *Martin* 639 (NBG); Ronde Vlei, *Grant* 8 (BM); Wilderness, edge of forest, *Marloth* 12708 (PRE); *Compton* 15759 (BOL, NBG); Wilderness, hilltop, *van Niekerk* 216 (BOL, PRE); Oakhurst, *Duthie* 1039 a (BOL).

KNYSNA. *Keet* 620, 999 (PRE); *Newdegate* 37 (SAM); Millwood, *Marloth* 2462 (PRE); The Crags, *Compton* 23588 (NBG); near Grootrivier, *Cassidy* 228 (NBG); *Barker* 6055 (BOL, NBG); Diep River, between Avontuur and Knysna, *Middelmost* 1813 (NBG); near Keurbooms River, *Story* 2861 (PRE); Bloukrans, *Loubser* 906 (NBG); *Middlemost* 1797 (BOL, NBG, SAM).

UNIONDALE. Many Waters Kloof, 3,000 ft., *Compton* 5288 (BOL, NBG); Helpmekaar, 4,000 ft., *Compton* 10506 (NBG); Kouga Mts., *Esterhuysen* 10793 (BOL); Lauterwater, 2,500 ft., *Compton* 4205 (BOL); Die Hoek, N. side of Tsitsikama Mts., *Esterhuysen* 16393 (BOL, PRE).

HUMANSDORP. *Thode* A 1045 (PRE); Kruisfontein Mt., near Humansdorp, *Galpin* 4730 (K, PRE); Tsitsikama, *Drege* 3494 (P); *Pappe* (No. 21506 in SAM).

UITENHAGE. Otterford Forest Reserve, *Rodin* 1112 (BOL, PRE); Uitenhage, *Harvey* 306 (BM, K).

PORT ELIZABETH. Port Elizabeth aerodrome, *Long* 194 (K); Van Stadens, *Long* 603 (K); Van Stadens Mt., *Zeyher* 306 (BOL, SAM); between Van Stadensberg and Sidbury, *Zeyher* 1638 (SAM).

ALEXANDRIA. De Bega Heights, *Archibald* 4459 (PRE); Suurberge Range, *Drege* 3494 a (K); 3494 e (BM); Suurberg Forest Reserve, *Long* 733 (K, PRE).

ALBANY. Grahamstown, *van Dam* (PRE); *Guthrie* 2083, 3442 (NBG); Sautars Post, near Riebeek, *Burchell* 3487 (K); Coldspring, near Grahamstown, *Rogers* 27516 (BOL, K, PRE); mountains near Grahamstown, *Schonland* in Herb. MacOwan 1737 (BM, K, SAM); near Grahamstown, *MacOwan* 15 (K); *Britten* (No. 26802 in BOL); hills in Albany, *MacOwan* (K); Sidbury, *Zeyher* 3971 (SAM); Howiesons Poort, *Dyer* 494 (PRE).

BATHURST. Port Alfred, *Tyson* (PRE); Hopewell Farm, *Compton* 19690 (NBG).

EAST LONDON. Prospect Siding, *Flanagan* (No. 28772 in PRE).

WITHOUT LOCALITY. *Prior* (K); *Zeyher* 1638 (K); *Drege* 3494 b (G); *Thunberg* (UPS, *Antholyza aethiopica* sheet c); *Barber* (K); *Burmann* (G); *Cooper* 3209 (K—locality given as Natal but this must be incorrect).

When N. E. Brown transferred this species to his newly established genus *Chasmanthe* in 1932 (Trans. Roy. Soc. S. Afr. 20: 273), he made the following note about its name: "Great confusion has been caused by the adoption of the name *Antholyza caffra* Ker for this plant. Ker's name was founded upon a different species which bore a mere manuscript name in the Banksian Herb.; no description of it was ever published by Ker or any other person until Baker described it under the name of *A. intermedia;* as that is the first description published of the plant, that name must be maintained for it, and the manuscript name, *A. caffra* Ker (not of Baker), placed as a synonym of it.

"As Baker's description of *A. caffra* in his Handbook of Iridaceae, p. 230, is the first description published under that specific name, the plant that is so described must bear the name *A. caffra* Baker (not *A. caffra* Ker), and must be retained as above amended (i.e. *Chasmanthe caffra* (Bak.) N. E. Br.) for the plant now well known in South Africa and elsewhere as *A. caffra.* Both the synonyms *Anisanthus splendens* Sweet and *Gladiolus splendens* Herb., quoted under *A. caffra* by Baker, belong to a totally different plant, *Anomalesia splendens* N. E. Br."

In 1937 an illustration of *Chasmanthe caffra* was published in Curtis's Botanical Magazine, t. 9470, with a description and account of the species by Milne-Redhead, who selected Burchell's No. 3487 as the type since

Baker had failed to indicate a type specimen. According to Milne-Redhead, Burchell's No. 3487 was collected on the lower part of the Postberg, near George, but he must have confused this number with Burchell's No. 6010, which is from that locality (cf. Baker in Fl. Cap. 6, p. 156, and Fourcade's "Notes on Burchell's Catalogus Geographicus (Middle Portion)" in Journ. S. Afr. Bot. vol. 10, p. 159 (1944)). According to notes made by myself at Kew in 1949, also to Baker in Fl. Cap. 6, p. 156, and to an article by Mrs. H. M. McKay, "Sketch Map of Burchell's Trek", in Journ. S. Afr. Bot. vol. 9, pp. 51–2 (1943), Burchell's No. 3487 was collected at Sautar's Post, near Riebeek (i.e. E. of Riebeek East) in the Albany Division. In view of this error I have selected Burchell's No. 6010 as the lectotype of *Anapalina caffra*, as this was probably the specimen intended by Milne-Redhead.

In my paper entitled "Some Aspects of the Morphology, Phylogeny and Taxonomy of the South African Iridaceae", published in 1954 (Ann. S. Afr. Mus. vol. 40, pp. 15–113), it was explained that considerable confusion had resulted in the past from relying too much on the morphology of the flowers alone, without taking into consideration the morphological characters of other parts of the plant. Some examples were given, among them *Chasmanthe caffra* and *C. intermedia*, which I considered were placed in the wrong genus and should be transferred to *Anapalina*, though no new combinations were published in that paper. The following arguments in support of this view were given:

"The corms, leaves, bracts, fruits and seeds of these two species are all typical of the genus *Anapalina* and none of these organs are the same as those of *Chasmanthe*. The corms are deep-seated, as in *Anapalina*, and enclosed in wiry reddish brown fibrous tunics which are not reticulate and extend up in a long neck. These characters do not agree with those of *Chasmanthe* but are typical of *Anapalina* and the closely allied genus *Exohebea* (i.e. *Tritoniopsis*—see Journ. S. Afr. Bot. vol. 25, pp. 319–355). The difference between the leaves of *Anapalina* and *Chasmanthe* was pointed out in the first part of this paper. The leaves of *C. caffra* and *C. intermedia* are typical of the former genus, with only a few prominent primary veins, instead of numerous veins and a pseudo-mid-rib as in *Chasmanthe*.

"The bifid bracteoles of *C. aethiopica* (type species of the genus *Chasmanthe*) are of the type most commonly found in the Ixioideae. In *C. caffra* and *C. intermedia* the bracteoles are slightly longer than the bracts and are of the type peculiar to *Anapalina* and *Exohebea* (i.e. completely united with a single apex, more or less dry, firm or moderately firm and brown or reddish at time of flowering. In the plant figured in the Botanical Magazine in 1937, t. 9470, the bracts and bracteoles are green but this is probably due to the conditions under which it was cultivated). The fruits and seeds are also quite unlike those of *Chasmanthe* but are like those of *Anapalina.* N. E. Brown's description of the seeds of *Anapalina* was incorrect, as was pointed out by Dr. L. Bolus: 'Dr. Brown describes the seeds as "flattened, winged all round": those I have seen are four-sided, each face being sculptured, or bearing processes, and being surrounded by a wing.' S. Afr. Gard. 23: 46 (1933).) (In *Chasmanthe* the capsule is somewhat rounded and the few seeds produced are fairly large and oval, with a smooth, shining, thick and brightly coloured testa. They are distributed by birds and not by wind, as are the light seeds of *Anapalina.*)

"It was only on account of the analogous flowers, with the uppermost lobe much longer than the other five, that the two species mentioned above were placed in *Chasmanthe.* In *Anapalina* the perianth lobes vary from subequal, as in *A. triticea,* to distinctly unequal. In *A. revoluta* (i.e. *A. nervosa*) there is a clear indication that the uppermost lobe tends to become elongated and in some of the forms of this widespread and variable species it is considerably longer than the other lobes, especially in some specimens collected in the Bredasdorp Division."